

SAJ/SAM - Evaluation of Turbidity Compliance Issues in the State of Florida Associated with Federal Navigation Projects

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BLUF: Beach and nearshore beneficial use activities associated with Federal projects in the State of Florida require permits setting turbidity limits that can potentially cause cost and schedule impacts during construction due to dredge shutdowns.

Problem Statement/Issues

- Permits must be obtained from FDEP for littoral placement of dredged material associated with Federal projects
- Permits have arbitrary turbidity compliance limits
- Turbidity levels often exceed compliance levels during placement activities
- Meeting compliance using required sampling methodology is problematic
- May result in temporary shut downs of dredging activities

Approach

- SAJ/SAM determine turbidity issues, identify available information
- Collaborate with FDEP to develop realistic turbidity requirements and sampling methodologies
- Develop a joint strategy to implement recommendations in defining and implementing turbidity permit conditions





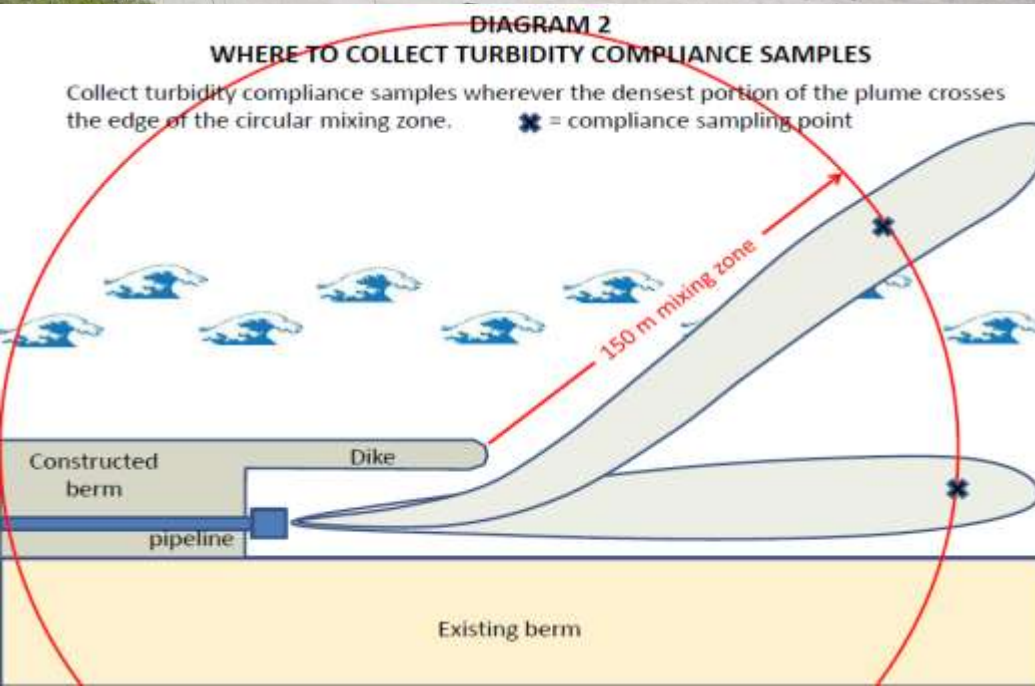
Turbidity Monitoring Work Group



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Downdrift plume from discharge.



Approach to Address Problem (Tools, Models, Technologies)

- Consider predictive models and tools to help determine thresholds and size of mixing zones
- Recommend monitoring methodologies towards establishing consistent turbidity sampling
- Analysis of turbidity data to determine project specific variations
- Explore other sources of turbidity data



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USACE RSM PDT

Partner

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Florida Department of Environmental Protection
Beaches, Inlets and Ports Program

Turbidity Monitoring Work Group

- Permittees
- Consultants
- Contractors
- Environmental Groups
- Regulators

Key Leveraging Opportunities

Establishment of the Turbidity Monitoring Working Group



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UPs – 3 Positives from effort

- Realistic thresholds should encourage beneficial use of dredged material and reduce costs by decreasing upland and offshore disposal and decreasing dredge shut-down times associated with exceeding compliance thresholds
- Establishes channels for interagency collaboration and coordination that will be required for planning and permitting beach and nearshore disposal practices
 - Working with the State's Turbidity Working Group
- Promote leveraging research opportunities for the development of useful predictive models and tools



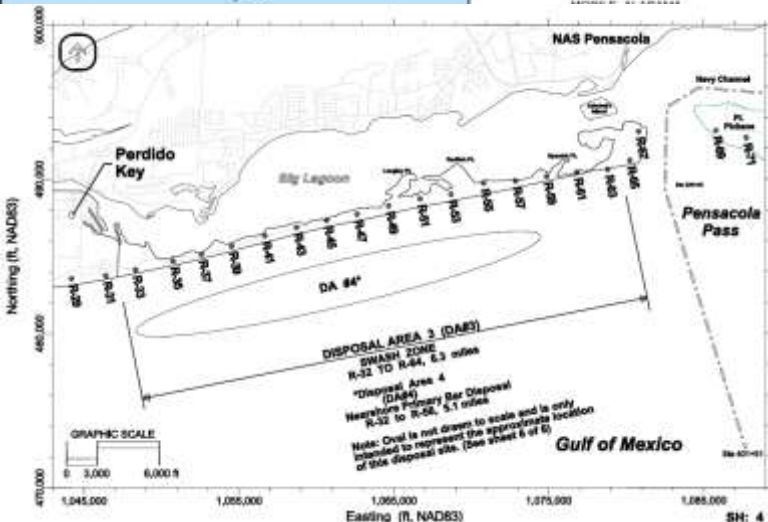
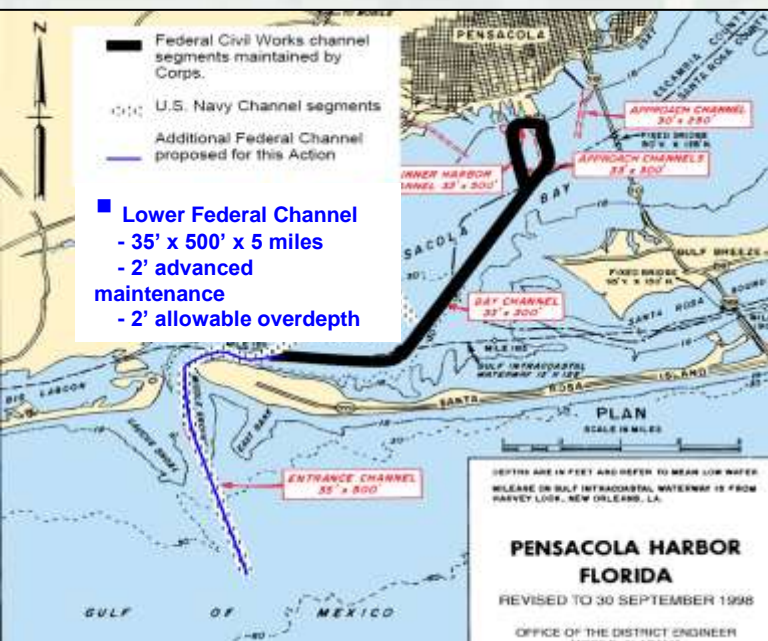
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DOWNs – 3 Negatives from effort

- Will likely be some initial costs to showcase and justify mixing zone needs
- Will hopefully result in changes to turbidity compliance criteria, however, this may take some time to institute throughout all Federal projects. May require permit modifications.
- Challenging the state on turbidity criteria thresholds. May experience pushback.



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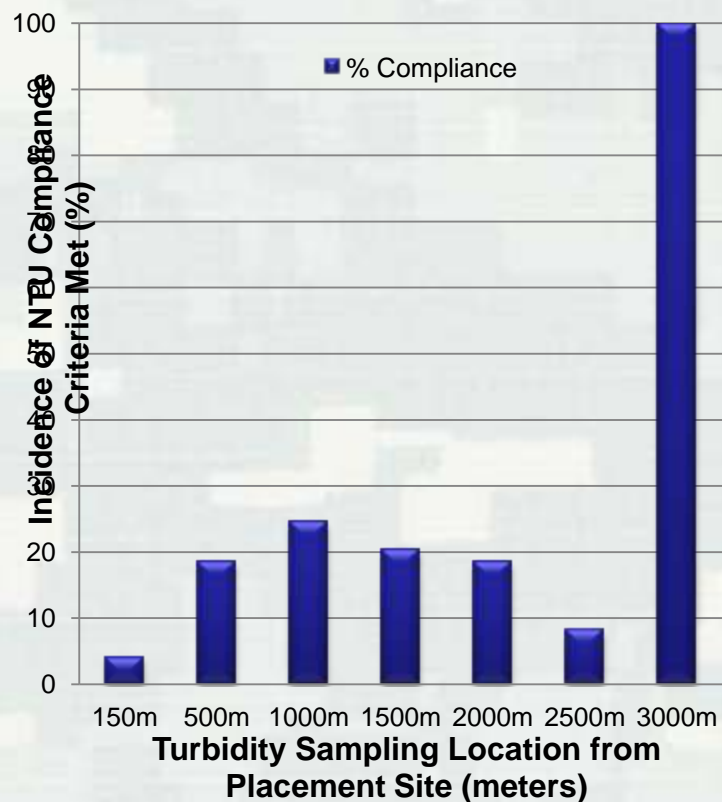


- Over 550 thousand cy of beach quality sand per dredging cycle
- Consistent with regional sediment management principles
- Utilized engineering modeling and analysis to predict behavior of plume at placement site utilizing:
 - Actual turbidity data from Panama City, Florida and other Panhandle projects to determine natural background variations
 - Littoral hydrodynamic processes for Pensacola area
- Requested and received variance for 3,000 meter mixing zone at placement area based on model results & nearby existing projects
- Dredging or filling shall cease immediately and not resume until corrective measures have been taken and turbidity has returned to acceptable levels



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% Compliance With Permit Conditions



- An expanded mixing zone of 3,000 m is justified
- Did not meet compliance majority of time inside 3,000 m
- Littoral mixing zones less than 3,000 m in this case would result in dredging shutdowns
- Impacts to numerous Federal projects along Florida panhandle

Value to the Nation:

- Significant money saved in the prevention dredge shut downs
- Encourages beneficial littoral placement of sand

